IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Klautky, et al.
Appl. No.	:	**10/676,568**
Filed	:	September 30, 2003
Title	:	AUTOMATED CYTOLOGICAL SAMPLE CLASSIFICATION
Examiner	:	Lyle Alexander
Group Art Unit	:	1797
Confirm. No.	:	7905

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being sent to the U.S. Patent and Trademark Office for filing through the e-filing portal of EFS-Web on

March 4, 2009
(Date)

/NancyRushton/
Nancy Rushton

RESPONSE AFTER FINAL

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Washington, D.C. 20231

Response under 37 CFR 1.116
Expedited Procedure
Examining Group

Dear Sir:

This paper is responsive to the Final Office Action, dated February 9, 2009. As noted by the Examiner, claims 30-31 and 33-39 have been renumbered as claims 30-38. Thus, unamended claims 1, 4-15, 21-24, 26, and 28-38 remain pending in this application. Claims 1, 4-15, 21-24, 26, 28 and 29 stand rejected and claims 30-38 have been withdrawn from consideration by the Examiner, for allegedly being drawn to a non-elected invention. Based on the following remarks, reconsideration and allowance of this application is respectfully requested. **No amendments to the claims are presented for entry with this paper**.

Restriction Requirement

Claims 30-38 stand withdrawn from consideration for allegedly being drawn to a non-elected invention. Applicants respectfully traverse and request withdrawal of the restriction requirement for the following reasons:

First, Applicants submit that the restriction requirement is not proper because it is not complete. In particular, the Examiner has not met all of the formal requirements of a restriction requirement since the Examiner has not set forth a reason for insisting upon the restriction (see MPEP §808). Although the Examiner alleges that each of Groups I, II and III is classified

differently, the Examiner has not stated why examination of all of the groups would be burdensome, especially at this stage of the examination history of the present application.

Second, Applicants respectfully submit that examination of all of the groups would not be burdensome, and that the different classifications of Groups I, II and III proposed by the Examiner are incorrect. For example, the Examiner's classification of Group I in class/subclass 436/177 is inappropriate, because the Group I method of classifying a cytological sample does not include "[l]iberation or purification of sample or separation of material from a sample …." The Examiner's classification of Group III in class 435 ("Chemistry: Molecular Biology and Microbiology"), is also inappropriate, because the Group III method for classifying a cytological sample is more properly classified in class 436 ("Chemistry: Analytical And Immunological Testing"). To the extent that Group II is properly classified in class/subclass 436/63 (testing biological cellular material), class/subclass 436/63 is also the most appropriate classification for Groups I and III. Thus, Applicants submit that Groups I, II, and III are not separately classified and that examination of all of the Groups would not be burdensome. ***Applicants further submit that examination of all of the Groups would not be burdensome because the claims in Groups II and III do not present any additional subject matter that has not presumably already been searched in the examination of Group I.***

Third, the Examiner's allegation that Groups I, II, and III are "related as subcombinations ***disclosed as usable together*** in a ***single combination***" (emphasis added) is incorrect. Independent claim 1 recites a method of classifying a cytological sample which includes providing a cytological sample in solution in a vessel, optically interrogating the solution with at least one wavelength of light, determining whether a result of said interrogation meets a criterion, attaching a positive designator to the sample vessel if the result meets the criterion, and attaching a manipulation designator to the sample vessel if the result does not meet the criterion. Independent claim 30 recites a method of classifying a cytological sample that includes optically interrogating a cytological sample in solution using at least one wavelength of light, determining, based on the interrogation, whether the sample has an adequate concentration of cellular matter needed for performing an intended assay, associating a positive designator with the sample if the sample has an adequate concentration of cellular matter for performing the intended assay, and associating a manipulation designator with the sample if the sample does not have an adequate concentration of cells to perform the intended assay. Independent claim 34 recites a method of classifying a cytological sample suspended in solution that includes optically interrogating the

sample using at least one wavelength of light, determining whether a result of said interrogation meets a criterion, associating a positive designator with the sample if the result meets the criterion, and associating a manipulation designator with the sample if the result does not meet the criterion. ***Nowhere in the present specification are the methods of claims 1, 30 and 34 disclosed as usable together.***

Fourth, according to MPEP §817, a proper restriction requirement should include a "short description of total extent of the subject matter claimed in each group" and the Examiner's short descriptions of the subject matter in each of Groups I, II and III are incorrect and misleading. For example, the Examiner describes Group II (claims 30-33) as being drawn to "a method of determining cell concentration." However, while the method claimed in Group II may include a step of determining whether a sample has an adequate concentration of cellular matter, the ***total extent*** of the subject matter claimed in Group II is actually a method of classifying a cytological sample based at least in part on such a determination. Claims 30-33 do not positively recite a step of determining cell concentration, and the end result of the method in claims 30-33 is that a sample is classified, not that a cell concentration of the sample is determined. Thus, Group II is <u>not</u> drawn to a method of determining cell concentration.

Similarly, the Examiner's short description of Group III (claims 34-38) as being drawn to "a method of performing an assay to detect human papilloma virus" is incorrect and misleading. While the method claimed in Group III may include a step of designating a sample as satisfactory for performing an assay to detect human papilloma virus (HPV), the ***total extent*** of the subject matter claimed in Group III is actually a method of classifying a cytological sample, which classification of the sample is carried out prior to performing an assay to detect HPV. Claims 34-38 do not positively recite a step of performing an assay to detect HPV, and the end result of the method in claims 34-38 is that a sample is classified, not that an assay to detect HPV is performed. Thus, Group III is not drawn to a method of performing an assay to detect HPV.

Regarding the Examiner's short description of Group I, to the extent that claims 1, 4-15, 21-24, 26, 28 and 29 can be properly described as "a method of determining if a specimen is adequate for cytological slide preparation," Groups II and III may also be described as "a method of determining if a specimen is adequate for cytological slide preparation." In fact, Group II relates to determining whether a specimen has an adequate concentration of cellular matter needed for performing an intended assay (see claim 30, lines 4-5), which intended assay comprises preparing a slide (see claim 30, lines 10-11). Group III relates to determining whether

a sample is satisfactory for performing an assay to detect HPV (see claim 34, lines 6-7 and 9-10), which assay includes withdrawal of an uncontaminated aliquot of the sample prior to preparing a slide (see p. 12, line 25 through p. 13, line 10 of the present specification). According to the description on p. 12, line 25 through p. 13, line 10 of the present specification, if a sample is satisfactory for performing the assay to detect HPV, then the sample is also satisfactory for preparing a slide.

Fifth, the Examiner's allegation that some of the subcombinations are separately usable is not correct. Specifically, the Examiner alleges that Group II has a separate utility such as a method for determination of cellular volume. As discussed above, Group II is directed to a method of classifying a sample, not determining cellular concentration. However, assuming *arguendo* that the method claimed in Group II can be used for determination of cellular volume (e.g., assuming that the step of "determining, based on the interrogation, whether the sample has an adequate concentration of cellular matter needed for performing an intended assay" may be construed to include determining cellular volume), the methods in Groups I and III are not precluded from being used in determining cellular volume. For example, in the step in claims 1 and 34 of "determining whether a result of said interrogation meets a criterion," the "criterion" may be "adequate concentration of cellular matter." Thus, to the extent that the Group II method can be used for "determination of cellular volume," determining cellular volume is not a ***separate utility*** of Group II since the Group I and III methods may also be used for determination of cellular volume.

Similarly, the Examiner's allegation that Group III has a separate utility to detect HPV is not correct. As discussed above, Group III is directed to a method of classifying a sample, not detecting HPV. However, assuming *arguendo* that the method claimed in Group III can be used for detecting HPV (e.g., if claim 38 can somehow be construed as including a step of performing the assay to detect the presence or absence of HPV), the methods in Groups I and II are not precluded from being used to detect HPV. For example, the methods in claims 1 and 34 designate the sample as satisfactory for preparing a slide from the sample if the sample meets a criterion (in claim 34, the "criterion" is "adequate concentration of cellular matter"). As described on p. 12, line 25 through p. 13, line 10 of the present specification, a sample designated as satisfactory for preparing a slide may also be satisfactory for withdrawing an aliquot of the sample in order to perform an assay to detect the presence or absence of HPV. Thus, to the extent that the Group III method can be used to detect HPV, detecting HPV is not a

separate utility of Group III since the Group I and II methods may be used for detecting HPV, as well.

In summary, Applicants have distinctly and specifically pointed out at least the following errors in the restriction requirement: (1) the restriction requirement is not complete, (2) examination of all of the groups would not be burdensome, (3) Groups I, II, and III are not related as subcombinations disclosed as usable together in a single combination, (4) the Examiner's short descriptions of the subject matter in each of Groups I, II and III is inaccurate, and (5) the Examiner's statements that some of the subcombinations are separately usable is inaccurate. As such, Applicants respectfully request withdrawal of the restriction requirement and further request an examination on the merits of claims 30-38.

Claim Rejections – 35 U.S.C. §112

Claims 1, 4-15, 21-26, and 28-29 stand rejected under 35 U.S.C. §112, second paragraph, for allegedly being indefinite. Claim 25 has been canceled and Applicants respectfully traverse the 35 U.S.C. §112, second paragraph rejection of claims 1, 4-15, 21-24, 26, and 28-29.

The Examiner states that claim 1 "is vague and indefinite what parameters are intended that designate a sample as satisfactory for preparing a specimen slide." The test for definiteness under 35 U.S.C. §112, second paragraph, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). Applicants submit that those skilled in the art would understand from reading claim 1 in its entirety that a sample is designated as satisfactory for preparing a specimen slide by attaching a positive designator to the sample vessel if the result of the optical interrogation meets a criterion. The Examiner is inappropriately requiring Applicants to narrow claim 1 by specifically reciting an example of the "criterion" that the result of the optical interrogation must meet in order for the sample to be designated as satisfactory for preparing a specimen slide. However, Applicants submit that doing so would unnecessarily limit Applicants' patent protection. In addition, MPEP §2173.02 states that "if the language used by applicant satisfies the statutory requirements of 35 U.S.C. §112, second paragraph, but the examiner merely wants the applicant to improve the clarity or precision of the language used, the claim must not be rejected under 35 U.S.C. §112, second paragraph."

The Examiner further states that claim 1 "is not clear what method is performed by the "manipulation designator designates" and what/how the required manipulation determined." Applicants submit that those skilled in the art would understand from reading claim 1 in its entirety that a sample is designated as requiring manipulation by attaching a manipulation designator to the sample vessel if the result of the optical interrogation does not meet a criterion. As discussed above, narrowing claim 1 by specifically reciting an example of a "criterion" would unnecessarily limit the scope of Applicants' patent protection. In addition, since claim 1 does not positively recite a step of performing the required manipulation, clarifying what/how the required manipulation is to be performed is not necessary in order for one of ordinary skill to ascertain the scope of the claim.

The Examiner asserts that "positive designator" will be interpreted as making a first optical measurement and making a determination about the sample based upon the first measurement and that "manipulation designator" will be interpreted as performing the appropriate step so proper analysis can be achieved. The Examiner's interpretations of "positive designator" and "manipulation designator" are improper. While claims should be given the broadest reasonable interpretation, the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach (see MPEP §2111). It appears that, rather than reading the claim language in the context of the rest of the claim or in light of the specification, the Examiner is interpreting the claim language to fit within the teachings of the art identified by the Examiner. Applicants submit that such an interpretation is not consistent with the interpretation that those skilled in the art would reach. In addition, interpreting "positive designator" and "manipulation designator" in such a manner ignores the rest of the claim language. For example, the Examiner is apparently ignoring the claim limitations of "the positive designator designates the sample as satisfactory for preparing a specimen slide from the sample" and "the manipulation designator designates the sample as requiring a manipulation to render the sample adequate for slide preparation."

Since the 35 U.S.C. §112, second paragraph rejection is improper for at least the reasons set forth above, Applicants respectfully request withdrawal of the 35 U.S.C. §112, second paragraph rejection of claims 1, 4-15, 21-24, 26, and 28-29.

Claim Rejections – 35 U.S.C. § 102

Zahniser

Claims 1, 6, 9-11, 15, 22, 24, 26 and 28-29 stand rejected under 35 U.S.C. § 102(b) for allegedly being anticipated by USP 5,168,066 ("Zahniser"). In order to sustain a rejection under §102, each element in the rejected claim must be found, either expressly or inherently, in the cited reference. Applicants respectfully traverse this rejection, since Zahniser does not disclose each and every element required by these claims.

In particular, claim 1 recites that the positive designator designates the sample as satisfactory *for preparing a specimen slide from the sample*; and the manipulation designator designates the sample as requiring a manipulation *to render the sample adequate for slide preparation*. (Emphasis Added). Claims 6, 9-11, 15, 22, 24, 26 and 28-29 depend from claim 1, and thus include the same limitations. Zahniser does not teach attaching a positive designator to the sample vessel if the sample is satisfactory for preparing a specimen slide from the sample, or attaching a manipulation designator to the sample vessel if a manipulation is required in order to prepare a specimen slide from the sample.

Despite this, the Examiner states that the claimed attachment of positive and manipulation designators may be read on the steps of recording the image and comparison to certain parameters to obtain a diagnosis taught by Zahniser. Applicants respectfully submit that this reading is contrary to the teachings of the specification, in view of which the application claims must be read. As discussed in the specification at p. 13, line 24 through p. 14, line 3, the designators can be physically or electronically attached to the sample vessel. Zahniser's recording of the image does not fall within this definition of a designator.

The Examiner also states (in the last paragraph on p. 5 of the Office Action dated 2/9/09) that (1) the claimed positive designator reads on Zahniser's alleged teaching of illuminating the sample to determine which specific stain was used, and (2) that the claimed manipulation designator reads on Zahniser's alleged teaching of determining the proper wavelength for analysis. However, these claim interpretations are not consistent with the interpretations discussed above, i.e., that the claimed attachment of positive and manipulation designators may somehow be read on Zahniser's steps of recording the image and comparison to certain parameters to obtain a diagnosis. Applicants respectfully request clarification on this issue from the Examiner.

In addition to not teaching a designator at all, Zahniser further does not teach attaching a designator *after* the step of determining whether a result of the optical interrogation meets a criterion. Independent claim 1 recites that a positive designator is attached if the result meets the criterion and a manipulation designator is attached if the result does not meet the criterion. Clearly, the claim requires that the step of determining whether the result meets the criterion must occur before attaching a designator since the decision of which designator to attach is based on whether the results meet the criterion. The Examiner states that the acts of (i) recording an image, and (ii) making a comparison with certain parameters to obtain a diagnosis, taught in Zahniser somehow read on the claimed acts of attaching a positive designator and attaching a manipulation designator steps. However, nowhere does Zahniser teach that a determination of whether a result meets a criterion occurs *before* attaching a designator, let alone a designator relating to whether a specimen slide may be prepared from the sample without further manipulation. Notably, the Examiner has consistently failed to respond to this argument.

For at least these reasons, Applicants respectfully submit that independent claim 1, along with those rejected claims which depend therefrom, are not anticipated by Zahniser, and respectfully request reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 102(b) based on Zahniser.

Isenstein

Claims 1, 4-15, 21-26 and 28-29 stand rejected under 35 U.S.C. § 102(e) for allegedly being anticipated by US 2004/0253144 ("Isenstein"). In order to sustain a rejection under §102, each element in the rejected claim must be found, either expressly or inherently, in the cited reference. Claim 25 has been canceled and Applicants respectfully traverse the rejection of claims 1, 4-15, 21-24, 26 and 28-29, since Isenstein does not disclose each and every element required by these claims.

In fact, Applicants submit that Isenstein does not teach *any* of the actions set forth in independent claim 1, and it is not at all apparent to the Applicants why/how Isenstein is being used by the Examiner for making the rejections. The Examiner simply states that "Figures 5-12 teach various decision trees that encompass the claimed automated method of classifying and analyzing the samples." However, Isenstein actually teaches a method for qualifying an automated biological screening system to ensure that it consistently provides accurate results in

identifying the most pertinent biological objects for subsequent review by a technician, which is not at all similar to the claimed method of classifying a cytological sample.

Claim 1 recites attaching a positive designator to the sample vessel or attaching a manipulation designator to the sample vessel. Isenstein does not teach attaching a positive designator to the sample vessel or attaching a manipulation designator to the sample vessel. Further, Isenstein does not teach or suggest that the positive designator designates the sample as satisfactory *for preparing a specimen slide from the sample* or that the manipulation designator designates the sample as requiring a manipulation *to render the sample adequate for slide preparation*. (Emphasis added).

Nevertheless, the Examiner states that Isenstein's alleged teaching of procuring a sample, generating a slide preparation from the sample, reviewing/marking/counting the cell, and determining if the slide is properly prepared reads on the claimed positive designator. The Examiner further states that Isenstein's steps of determining if the sample requires further manipulation and processing the sample appropriately read on the claimed manipulation designator. However, these interpretations ignore the claim limitations of a positive designator designating the sample as satisfactory *for preparing a specimen slide from the sample*; and a manipulation designator designating the sample as requiring a manipulation *to render the sample adequate for slide preparation*, and the Examiner has failed to address these claim limitations.

For at least these reasons, Applicants respectfully submit that independent claim 1, along with the remaining claims which depend therefrom, are not anticipated by Isenstein, and respectfully request reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 102(e) based on Isenstein.

Claim Rejections – 35 U.S.C. § 103

Zahniser and Zweig

Claims 4, 5, 7, 8, and 12-14 stand rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Zahniser in view of USP 6,629,057 ("Zweig"). Applicants respectfully traverse this rejection, since no combination of Zahniser and Zweig discloses, teaches, or suggests the combination of elements required by these claims.

In particular, as discussed above, Zahniser does not teach or suggest several elements of independent claim 1, from which claims 4, 5, 7, 8, and 12-14 depend. For example, Zahniser

does not teach or suggest attaching a positive or manipulation designator to the sample vessel after determining whether a result of an optical interrogation meets a criterion. Nor does Zahniser teach or suggest that the positive designator designates the sample as satisfactory *for preparing a specimen slide from the sample* or that the manipulation designator designates the sample as requiring a manipulation *to render the sample adequate for slide preparation.* (Emphasis added). Zweig does not supplement this deficiency in Zahniser.

Nor does Zweig teach or suggest that the sample meets the criterion if it contains a sufficient quantity of cellular matter for performing a diagnostic evaluation of the specimen slide, as required by claims 4 and 5; that the positive designator indicates that the sample is adequate in quantity to allow for withdrawal of a portion of the sample sufficient for performing a diagnostic evaluation of the specimen slide, as required by claim 7; that the manipulation designator indicates that acquisition of additional cellular matter in the sample is needed for performing a diagnostic evaluation of the specimen slide, as required by claim 8; or that the criterion is a concentration of cells in the sample, as required by claims 12-14.

Thus, Applicants submit that claims 4, 5, 7, 8, and 12-14 are not obvious over any proper combination of Zahniser and Zweig, and as such, respectfully request withdrawal of the 35 U.S.C. §103 rejection of these claims.

Zahniser

Claims 21 and 23 stand rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Zahniser. Applicants respectfully traverse this rejection, since Zahniser does not disclose, teach, or suggest the combination of elements required by these claims.

As discussed above, Zahniser does not teach or suggest several elements of independent claim 1, from which claims 21 and 23 depend. For example, Zahniser does not teach or suggest attaching a positive or manipulation designator to the sample vessel after determining whether a result of an optical interrogation meets a criterion. Nor does Zahniser teach or suggest that the positive designator designates the sample as satisfactory *for preparing a specimen slide from the sample* or that the manipulation designator designates the sample as requiring a manipulation *to render the sample adequate for slide preparation.* (Emphasis added). Since Zahniser does not teach or suggest attaching a positive or manipulation designator to a vessel at all, it follows that Zahniser does not teach that the positive and manipulation designators comprise a physical